EHS Validation Report Number: 415

SBA Shipyard Site
Jennings, Louisiana

Analyses performed by ALS Environmental, Kelso, Washington

Sample Delivery Group (SDG): K2205501
Analyses: Butyltin
Review Level: Tier II

EHS Support

Report Date:
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100028917

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Sample Summary

Fish tissue samples were collected at the SBA Shipyard Site in Jennings, Louisiana and were analyzed by ALS Environmental in Kelso, Washington. The analytical method used was SOC-BUTYL Rev 17.0, the laboratory's in-house method for analysis of butyltin compounds using a gas chromatograph with flame photometric detector. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the following table.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Butyltin Analysis
K2205501	K2205501-001	IAC-7-PFT03	Tissue	6/19/2021	X
K2205501	K2205501-002	IAC-7-BFT03	Tissue	6/19/2021	X
K2205501	K2205501-003	MRBKGD-UP-PFT06	Tissue	6/18/2021	X
K2205501	K2205501-004	MRBKGD-UP-BFT06	Tissue	6/20/2021	X

SDG Sample delivery group

1 Data Review Summary

1.1 Guidelines and Qualifiers

Data were reviewed in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines (Organic, January 2017), laboratory analytical methods, and professional judgment. Relevant USEPA Region 2 Data Validation Standard Operating Procedures (SOPs) are referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While quality control (QC) is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria are met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

Qualifier Code	Definition
U	The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.
UJ	The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

QC Quality control

1.2 Sample Custody and Receipt

Samples were received in good condition and properly preserved. It is assumed that custody was maintained and that the gaps between the relinquishing date/time and the receiving date/time correspond to the time samples were in the custody of a commercial shipper.

The lab report included notes of discrepancies between sample IDs on containers and those on the chain. Administrative issues, such as these, do not impact the quality of reported results.

1.3 Assessment Summary and Data Usability

In this SDG, no QC excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Refer to the following sections for specific QC information.

2 Semi-volatile Organic Compound (SVOC) Analysis

2.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
ALS Kelso in-house method SOC-BUTYL, Rev 17.0	Tissue	Frozen	1 year from collection to extraction, 40 days from extraction to analysis

°C Degrees Celsius

2.2 Blanks

Blanks are analyzed to identify contamination that may have been introduced into samples. There are several types of blanks that undergo different portions of the process undergone by field samples. In short, blanks are containers of analyte-free water (and, in some cases, analyte-free or 'clean' sand when associated samples are solids). The following are some common types of blanks:

- Laboratory method blanks indicate contamination introduced during sample preparation and/or analysis from sources such as reagents, glassware, equipment, sample handling, and ambient laboratory conditions.
- Equipment blanks indicate the effectiveness of the field decontamination procedures as well as contamination from new sampling equipment. They also identify contamination introduced from bottleware and ambient conditions.

Acceptance criteria were met. Method blank results were non-detect.

2.3 Surrogates

Surrogates are chemicals that are similar to target compounds in chemical composition, extraction, and chromatography but are not expected to be present in samples. Each field sample and QC sample is spiked with a known concentration of the appropriate surrogate compound(s) before sample preparation and analysis. Surrogates are incorporated into samples, and their recoveries are shown to predict experimental recoveries of target analytes. Surrogates are used to monitor performance of the preparation and analysis process, particularly extraction efficiency and possible matrix interference, on a sample-specific basis.

Acceptance criteria were met; surrogate recoveries were within control limits.

2.4 Laboratory Control Sample (LCS) Analysis

A laboratory control sample (LCS) is prepared when known concentrations of target analytes are spiked into an aliquot of analyte-free material (deionized water or 'clean' sand). The LCS undergoes the same preparation and analytical procedure as field samples do. It is analyzed to determine, without sample matrix, whether the overall procedure is working within control limits. The recoveries of the spiked analytes are evaluated to determine accuracy.

Acceptance criteria were met; reported percent recovery values were within control limits.

2.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

A matrix spike (MS) is prepared when known concentrations of target analytes are spiked into an aliquot of a field sample. The MS undergoes the same preparation and analytical procedure as normal (unspiked) field samples. It is analyzed to evaluate the effects of interferences caused by the sample matrix. Poor spike recoveries could indicate matrix interference issues.

A matrix spike duplicate (MSD) is an additional replicate of the matrix spike, i.e., a separate aliquot of sample into which the same concentrations of analytes are spiked. The MS and MSD undergo the same preparation and analytical testing as the original sample. Recoveries of analytes from matrix spiked samples and from matrix spiked duplicates are evaluated to assess accuracy and bias. The RPD between the MS result and the MSD result is evaluated to assess precision.

Not applicable; no matrix spike analysis performed on a sample in this data set was reported.

2.6 Compound Identification

Acceptable; no issues to report.

2.7 Field Duplicates

Not applicable; this data set does not include any field duplicate samples.

2.8 Additional Notes

The laboratory report narrative includes a note saying “Method ALS SOP, 06/03/2022:The upper control criterion was exceeded for Di-n-butyltin and Tri-n-butyltin in Continuing Calibration Verification (CCV) KQ2209620-01 and-03. The field samples analyzed in this sequence did not contain the analytes in question above the MRL. Since the apparent problem indicated a potential high bias, the data quality was not affected.” Results for di-n-butyltin and tri-n-butyltin were all not-detect and therefore did not need to be qualified as a consequence of the high recoveries in an associated CCV sample.

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